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Claims Amendments

1.   (Currently Amended) A translator device, comprising:

one or more processors; and

a memory storing program instructions executable by the one or more processors to cause the translator device to implement:

a receiver circuit manager configured to receive information ~~transmitted from a source device using~~ of a source format, wherein the received information ~~is intended for~~ indicates a destination device;

a message converter configured to convert the received information from the source format to a destination format, wherein said converting includes using a poly-dimensional finite state machine that is configured to convert the received information based at least in part on three or more different variables, and wherein the message converter is configured to support converting the received information ~~using~~ to at least one ~~other~~ format other than the destination format; and

a message sender configured to ~~transfer~~ transmit the converted information to the destination device using the destination format;

wherein the three or more different variables include a variable that specifies the destination device, a destination protocol corresponding to the destination device, or a destination application corresponding to the destination device.

2.   (Currently Amended) The translator device of claim 1, wherein the finite state machine includes a multi-stage pipeline comprising a first stage and at least one subsequent stage, and wherein the first stage is configured to use the three or more different variables. ~~message converter is further configured to determine the destination format based at least one of: the destination device, a destination protocol corresponding to the destination device, and a destination application corresponding to the destination device.~~

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3.   (Currently Amended) The translator device of claim 1, wherein the finite state machine includes a multi-stage pipeline comprising a first stage and at least one a subsequent stage, and wherein each the subsequent stage of said multi-stage pipeline is configured to determine a result as a function of one or more of the three or more different input variables, and wherein said one or more of the three or more different input variables of each of said at least one subsequent stage includes the a determined result from a prior the first stage of the multi-stage pipeline.

4.   (Currently Amended) A method, comprising:
        a translator device receiving information transmitted from a source device using of a source protocol, wherein the received information is intended for includes an indication of a destination device;
        the translator device determining a destination protocol corresponding to the destination device;
        the translator device converting the received information to the destination protocol, wherein said converting includes using a poly-dimensional finite state machine that is configured to convert the received information based at least in part on three or more different variables, wherein the three or more different variables include a variable that specifies the destination device, the destination protocol corresponding to the destination device, or a destination application corresponding to the destination device; and
        the translator device sending the converted information to the destination device using the destination protocol.

6.   (Currently Amended) The method of claim 4, wherein the finite state machine includes a multi-stage pipeline comprising a first stage and at least one a subsequent stage, and wherein each the subsequent stage of said multi-stage pipeline is configured to determine a result as a function of one or more of the three or more different input variables, and wherein said one or more of the three or more different input variables of each of said at least one subsequent stage include[[d]]s the a determined result from a prior stage of the multi-stage pipeline.

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7.   (Currently Amended) An article of manufacture including a computer-readable memory medium having instructions stored thereon that, ~~if executed~~ in response to execution by a device, cause the device to perform a method comprising:

receiving information ~~transmitted from a source device using~~ of a source format, wherein the received information ~~is intended for~~ indicates a destination device;

determining a destination format corresponding to the destination device;

converting the received information to the destination format, wherein said converting includes using poly-dimensional finite state machine that is configured to convert the received information based at least in part on three or more different variables, wherein the three or more different variables include a variable that specifies the destination device, the destination format corresponding to the destination device, or a destination application corresponding to the destination device; and

sending the converted information to the destination device using the destination format.

8.   (Previously Presented) The article of manufacture of claim 7, wherein the finite state machine includes a multi-stage pipeline comprising a first stage and at least one subsequent stage, wherein each the first stage of said multi-stage pipeline is configured to use the three or more different variables. ~~to determine a result as a function of one or more input variables, and wherein said one or more input variables of each of said at least one subsequent stage included the determined result from a prior stage of the multi-stage pipeline.~~

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12.   (Currently Amended) A method, comprising:

a communication device receiving an input message transmitted using a source communication protocol, wherein the input message has a source data format;

the communication device generating an output message from the received input message, wherein the output message has a destination data format and is to be transmitted using a destination communication protocol;

wherein said generating includes using a multi-stage, poly-dimensional finite state machine to:

convert the source communication protocol of the input message to the destination communication protocol of the output message; and

convert the source data format to the destination data format of the output message;

where the multi-stage, poly-dimensional finite state machine is configured to convert the received information based at least in part on three or more different inputs, and wherein inputs to various stages of the finite state machine the three or more inputs include an input[[s]] that is indicative of the source data format, the source communication protocol, the destination data format, and or the destination communication protocol.

13.   (Currently Amended) The method of claim 12, the finite state machine having a first stage and one or more additional stages, wherein each of the stages generates an output from two or more inputs to that stage using a poly-dimensional matrix, and wherein each of the one or more additional stages includes an output from the a previous stage[['s]] output as an input [[;]].

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20. (Currently Amended) An apparatus, comprising:

one or more processors; and

a memory storing program instructions executable by the one or more processors to cause the apparatus to:

receive an input message; and

perform data format conversion and protocol conversion of the input message to generate an output message using a multi-stage, poly-dimensional finite state machine having at least one stage that has at least two inputs

wherein the poly-dimensional finite state machine is configured to convert the received information based at least in part on three or more different inputs, and wherein the three or more different inputs include an input that specifies a destination device, a destination protocol corresponding to the destination device, or a destination application corresponding to the destination device

26. (Currently Amended) An apparatus, comprising:

a ~~logic~~ hardware unit configured to implement a message converter having a finite state machine, and

wherein the finite state machine is a poly-dimensional state machine that performs data format and protocol conversion on an input message having a first data format and a first communication protocol to produce an output message having a second data format and a second communication protocol, wherein the data format and protocol conversion is based at least in part on three or more different inputs, and wherein the three or more inputs include an input that specifies a destination device, the second communication protocol, or the second data format.

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31.   (Currently Amended) An apparatus, comprising:

first means for ~~communicatiing with devices external to the apparatus.~~ receiving information of a source format, wherein the received information indicates a destination device;

second means for ~~performing protocol and data format translation using a multi-stage, poly-dimensional finite-state machine on an input message to produce an output message.~~ executing instructions that cause the apparatus to convert the received information from the source format to a destination format, wherein said converting includes using a poly-dimensional finite state machine that is configured to convert the received information based at least in part on three or more different input variables, and wherein the second means is configured for supporting converting the received information to at least one format other than the destination format; and

third means for transmitting the converted information to the destination device using the destination format.

wherein the three or more different input variables include a variable that specifies the destination device, a destination protocol corresponding to the destination device, or a destination application corresponding to the destination device.

33.   (Currently Amended) The apparatus of claim 31, wherein the finite state machine includes a multi-stage pipeline comprising a first stage and at least one subsequent stage, and wherein the first stage is configured to use the three or more different input variables. ~~second means includes one or more reserved inputs for use in accommodating future communication protocols and/or data formats.~~

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34. (Currently Amended) One or more computer readable memory media having stored thereon instructions that, ~~if executed~~ in response to execution by a computing device, cause the computing device to implement a multi-stage, poly-dimensional finite state machine for converting an input message to an output message, including converting a first communication protocol of the input message to a second communication protocol for the output message, and further including converting a first data format of the input message to a second data format of the output message;

wherein the poly-dimensional finite state machine is configured to convert the received information based at least in part on three or more different inputs, and wherein the three or more different inputs include an input that specifies a destination device, the second communication protocol, or the second data format.

36. (Currently Amended) The computer readable memory media of claim 34, wherein the three or more inputs ~~to various stages of the finite state machine~~ include inputs indicative of the first and second communication protocols and inputs indicative of the first and second data formats;

and wherein the inputs to various stage of the finite state machine further include one or more of the following inputs: 1) inputs indicative of first and second application types for a first application originating the input message and a second application for which the output message is destined, respectively; 2) inputs indicative of a first device type and a second device type for a first device that originated the input message and a second device for which the output message is destined, respectively, 3) input indicative of a current connection status between the first and second devices; and 4) input indicative of a current state of the finite state machine.

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